

Applicants respectfully submit that none of Herbert, Miyata, Materick, Le Moullac I, Le Moullac II, Nara, or Allitt suggest the features recited in claims 1 and 6. Specifically, none of the applied references suggest all of the features of a vulcanizing mold for a pneumatic tire comprising upper and lower tread mold members being constituted of upper segments and lower segments, a spring that urges the lower segments radially outwards, and a single cam ring in direct engagement with the upper and lower tread mold members, the single cam ring being displaceable independently of approaching displacements of the sidewall mold members toward each other, to thereby simultaneously displace all of the upper and lower segments radially inwards while the single cam ring remains in direct engagement with the upper and lower tread mold members and while the upper and lower segments are in abutment with each other, as recited in claim 1.

Further, none of the applied references suggest a vulcanizing method for vulcanizing pneumatic tires with a vulcanizing mold comprising upper and lower tread mold members, which are in direct engagement with a cam ring, the lower segment being urged radially outwards by a spring, the method comprising the step of operating the cam ring while the cam ring remains in direct engagement with the upper and lower tread mold members to simultaneously displace all of the segments radially inwards independently of approaching displacements of the sidewall mold members towards each other and relative to the upper and lower sidewall mold members, with the upper segments in abutment with the lower segments, as recited in claim 6.

The Office Action, on page 3, acknowledges that Herbert fails to disclose that the cam ring simultaneously displaces all of the upper and lower segments radially inwards while the cam ring remains in direct engagement with the upper and lower tread mold members, but asserts that Miyata discloses a single cam ring 4 formed of two connected parts 4a, 4b that simultaneously displaces all of the tread mold segments radially inwards. The Applicants

agree that Herbert is deficient. However, Applicants respectfully disagree Miyata overcomes Herbert's deficiencies.

First, Miyata fails to disclose a single cam ring, as recited in claim 1, or an operation of the cam ring while the cam ring remains in direct engagement with the upper and lower tread mold members, as recited in claim 6.

As disclosed in the figures of Miyata, Miyata consists of an actuator 4 which is divided into an upper actuator portion (or tapered ring half 4a), and a lower actuator portion (or tapered ring half) 4b which are movable upward and downward relative to the sector 3 (col. 6, lines 3-6, Fig. 1). The upper actuator portion 4a is provided with a connecting means 30 for lifting the lower actuator portion 4b in suspension (col. 7, lines 9-11). Therefore, Miyata discloses a means for radially moving the upper sector portion 3a and the lower sector 3b, respectively, by an upper actuator portion 4a and a lower actuator portion 4b (col. 7, lines 52-67).

In Miyata, the upper and lower sector portions 3a, 3b are each caused to be moved by different actuator portions 4a, 4b, respectively. As each of the actuator portions 4a, 4b are distinct structural components, Miyata fails to show a single cam ring which directly engages the upper and lower tread mold members, and simultaneously displaces all of the upper and lower segments radially inwards, as recited in claim 1, or a cam ring, while the cam ring remains in direct engagement with the upper and lower tread mold members, to simultaneously displace all of the segments radially inwards, as recited in claim 6.

Secondly, there is no motivation to modify the disclosure of Herbert with the disclosure in Miyata to provide a cam ring in direct engagement with both the upper and lower tread mold members for simultaneous displacement, in contrast to the assertion on page 4 of the Office Action.

In Herbert, the body 66 (and the upper segment 42) and the body 11 (and the lower segment 10) are moved inward while the ring 43 is initially engaged only with the body 66 (page 5, lines 77-86). The body 66 and body 11 are abutted prior to the movement of the ring 43, whereby the upper mould part 2 containing the body 66 is first lowered, allowing the projections 81 of the body 66 to engage with the aligned recesses 34 of the lower segment parts containing the body 11 (page 5, lines 44-57, Fig. 3). This initial lowering of the upper mould part 2, and the engagement of the projections 81 with the recesses 34 presses the release pin 28 downward to cause the arresting pin 22 to be forced out of the arresting bore 29 (page 5, lines 57-60).

In fact, the initial lowering of the upper mould part 2 containing the body 66 must occur prior to the downward movement of the ring 43 to allow projections 81 to displace the arresting pin 22. To allow such, Herbert discloses the support 41 to which the upper segment 42 is attached, is able to move relatively and independently with respect to the plate 45 to which the ring 43 is attached (page 4, lines 26-28). As a result, in Herbert, the cam ring simultaneously displace all of the upper and lower segments radially inwards, while the single cam ring does not remain in direct engagement with the upper and lower tread mold members.

To allow the ring 43 to move downward prior to the engagement of the projections 81 with the recesses 34 so that the upper body 66 abut body 11 will cause the projections 81 of Herbert to miss its alignment with recesses 34, and fail to cause displacement of the arresting pin 22.

Therefore, any suggested modification to the teachings in Herbert must take into account of the specific functions of the structural features such as the independently movable upper segment/ring, the projections 81, the recesses 34, and the arresting pin 22 disclosed in Herbert.

However, the asserted modification in the Office Action does not take account of the above, and would require elimination of important structures of Herbert. This is so because Miyata assures reliable radial movement of the upper and lower sectors 3a, 3b by having two distinct actuators means 4a, 4b for causing relative movement of the upper and lower sectors 3a, 3b, respectively. Therefore in Miyata, the movement of the lower actuator 4b and the lower sector 3b is assured only when the upper actuator 4a contacts the lower actuator 4b.

In Miyata, the abutment of the upper and lower actuators 4a, 4b occurs simultaneously with the abutment of the upper and lower sectors 3a and 3b, respectively (col. 7, lines 52-57). This is possible in Miyata because the upper sector 3a is attached to the upper actuator 4a through the upper platten 6a (col. 6, lines 9-28, Fig. 12), which does not allow for a completely independent downward movement of the upper actuator 4a from the upper tread mold sector portion 3a, unlike the upper portion 42 and the ring 43 disclosed in Herbert.

Therefore, assuring reliable inward movement of the lower tread mold member using the teaching in Miyata would require use of a divided cam ring structure with an integrated upper actuator/upper sector. However, such is incompatible with Herbert's teaching of an independently movable ring/upper segment, because, for example, without the independent lowering of the ring 43 with respect to the upper segment, the displacement of the arresting pin 22 would not be assured.

In view of the above, Applicants respectfully submit that there is no motivation to combine the teachings in Herbert with those in Miyata to render claims 1 and 6 obvious. Further, as the remaining references also fail to overcome the features lacking in Herbert and Miyata, claims 1 and 6 are patentable over all of the applied references. Claims 2, 4 and 5, which depend from claim 1, are also patentable over the applied references for at least the reasons discussed above and for the additional features they recite. Withdrawal of the rejection of claims 1, 2, and 4-6 is respectfully requested.

Regarding the responses to the Applicant's arguments found on page 5, item 3, the Applicants refer to the above arguments.

II. **Conclusion**

For the reasons stated above, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are respectfully requested.

Should the Examiner believe that anything further would be desirable in order to place this Application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned representative at the telephone number listed below.

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